

### **Tuberculosis - Massachusetts**

In 2011, 196 cases (incidence rate 2.99 per 100,000 population) of active tuberculosis (TB) were reported to and verified by the Massachusetts Department of Public Health, Division of TB Prevention and Control. This is the lowest case rate ever recorded in Massachusetts. There has been a 27% decline in TB cases in the past three years, from a rate of 4.11 per 100,000 in 2008 to 2.99 per 100,000 in 2011 and the overall rate of TB in Massachusetts is similar to that of the United States as a whole.

### **Drug Resistance**

In 2011, 143 (73%) of these 196 TB cases were bacteriologically confirmed by positive culture for *Mycobacterium tuberculosis*.

Of the 143 bacteriologically confirmed cases, drug susceptibility testing was performed on isolates for 139 TB cases (97%). Isolates for 28 cases (20%) were resistant to one or more anti-tuberculosis drugs. Isolates for 13 cases (46% of 28 cases, 9% of 143 cases) were resistant to isoniazid (INH) either alone or in combination with other agents.

In 2011, there were no MDR-TB cases (multi-drug resistant, defined as resistance to at least INH and rifampin (RIF)), and no XDR-TB cases (extremely drug resistant, defined as MDR-TB with additional resistance to any fluoroquinolone and at least one injectable second-line drug, such as amikacin, kanamycin or capreomycin).

### **Race/Ethnicity**

Persons in minority population groups composed 84% of the TB cases in 2011. For blacks, the incidence rate was 10.96 per 100,000, and for Hispanics, the rate was 4.46 per 100,000. Asians continue to have a higher incidence rate than any other group (22.41 per 100,000 in 2011). Blacks are 17.4 times more likely than whites to be diagnosed with TB, Hispanics 7.1 times more likely, and Asians 35.6 times more likely than whites.

### **Higher Risk Groups**

**Non-U.S. born** (persons born outside the United States and its territories): Among 196 cases, 165 (84%) were reported in non-U.S. born persons in 2011; 68 cases (41%) were from 4 countries, with India and Vietnam accounting for 18 cases (11%) each, followed by Haiti with 17 cases (10%) and China with 15 cases (9%). The remaining 97 cases (59%) included persons from 35 different countries. Between 1993 and 2011, 51% of the 3,511 Non-U.S. born cases were diagnosed within five years of arrival to the United States, with 11% being diagnosed in the first year.

**Homeless:** Of the 196 cases of TB reported in 2011, nine cases (4%) were reported to have been homeless (estimated homeless incidence rate of 51.5 per 100,000). Among the nine homeless cases, five (55%) were reported from Boston with the remaining four (44%) from other Massachusetts communities.

**Incarcerated:** In 2011, four cases (2%, 16.9 per 100,000) were diagnosed in correctional facilities.

**HIV co-infected:** Ten TB cases (5%) in 2011, were known to be co-infected with human immunodeficiency virus (HIV), a rate similar to previous years.

**Children:** In 2011, eight TB cases were children <15 years of age (4% of cases, incidence rate <1 per 100,000 among children <15 years old). All eight (100%) were <5 years of age and seven (88%) were US born.

<b>Characteristics of TB Cases 2011 (N=196)</b>	
<b>Demographics</b>	<b># (%)</b>
<b>Sex</b>	
Male	113 (58%)
Female	83 (42%)
<b>Race Ethnicity</b>	
White, non-Hispanic	32 (17%)
Black, non-Hispanic	49 (25%)
Hispanic	28 (14%)
Asian	87 (44%)
<b>Place of Birth</b>	
US born	31 (16%)
Non-US born	165 (84%)
<b>Age (years)</b>	
<5	8 (4%)
5-14	0 (0%)
15-19	7 (4%)
20-24	20 (10%)
25-44	70 (36%)
45-64	47 (24%)
65+	44 (22%)
<b>Clinical Presentation</b>	
<b>Primary Site of Disease</b>	
Pulmonary	121 (62%)
Extra-pulmonary	56 (29%)
Both	19 (9%)
<b>Chest X-Ray Results (pulmonary involvement)</b>	(N=168)
Cavitary disease only	43 (26%)
Miliary disease only	0 (0%)
Cavitary and miliary disease	1 (<1%)
Non-cavitary disease only	113 (67%)
Normal	11 (7%)
<b>High Risk Groups +</b>	
Non-U.S Born	165 (84%)
Children < 15 Yrs.	10 (5%)
Prison/jail	4 (2%)
Homeless	9 (4%)
Substance abuse*	17 (9%)
HIV positive	10 (5%)
<b>Drug Resistance (N=139)</b>	
Bacteriologically Confirmed Cases with Drug Sensitivity results)	
<b>Pattern</b>	
Resistance to at least 1 drug	28 (20%)
Resistance to at least INH	13 (9%)
Resistance to at least INH + RIF (MDR-TB)	0
+ Not mutually exclusive groups * Alcohol, injecting and/or non-injecting drug abuse	

**Note:** All incidence rates are per 100,000 population.

For additional information, please visit our web page: <http://www.mass.gov/dph/cdc/tb>